

Abstract Submitted  
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**A compressible real gas eulerian model for LES of fuel sprays**

EDWARD KNUDSEN, ERIC DORAN, Bosch Research And Technology Center  
— A compressible solver for eulerian multiphase spray simulations is presented. This large eddy simulation solver employs a Peng-Robinson (PR) equation of state to describe mixtures of two species such as liquid dodecane and gaseous nitrogen. Modeling challenges associated with the use of PR are discussed, as are the resource requirements associated with using a compressible formulation to describe liquids when full fuel injector applications are considered. The solver is analyzed using canonical cases and the Spray A experiment from the Engine Combustion Network.

Edward Knudsen  
Bosch Research And Technology Center

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